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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) A method of detecting Parkinson's disease (PD) through MRI of brain tissue that includes substantia nigra pars compacta ~~compacta~~ (SNc) tissue comprising:

obtaining a gray matter suppressed (GMS) MRI signal of brain tissue that includes said SNc tissue;

obtaining a white matter suppressed (WMS) MRI signal of brain tissue that includes said SNc tissue;

~~combining processing~~ information from said GMS and WMS MRI signals ~~so as~~ to produce and present resultant signals indicative of PD.

2. (original) A method as in claim 1 in which said obtaining of each of the GMS and WMS MRI signals comprises using an inversion recovery (IR) pulse sequence.

3. (currently amended) A method as in claim 2 including forming GMS and WMS MRI images using information from said GMS and WMS MRI signals, respectively, and wherein said ~~combining processing~~ step comprises combining processing at least portions of said GMS and WMS images.

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4. (currently amended) A method as in claim 3 in which said ~~combining~~ processing comprises obtaining a ratio image of at least portions of said GMS and WMS images for at least one MRI slice.

5. (currently amended) A method as in claim 4 further comprising processing selected medial and lateral regions of interest in each ratio image to derive a numerical measure indicative ~~indicate~~ of the presence and/or staging of PD.

6. (original) A method as in claim 1 further including using the resultant signals to stage PD.

7. (original) A method as in claim 1 including plotting the resultant signals in a two-dimensional plot in which markers for patients with PD appear in an area different from that for patient without PD.

8. (currently amended) A method as in claim 7 in which the markers for patient with PD appear in different areas of the plot corresponding to different stages of PD.

9. (previously presented) A method as in claim 1 including causing said resultant signals to be indicative of a relative loss of MRI signal from lateral as compared with medial portions of the SNc.

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10. (currently amended) A method of detecting Progressive Supranuclear Palsy (PSP) through MRI of brain tissue that includes substantia nigra pars compacta ~~compacta~~ (SNc) tissue comprising:

obtaining a gray matter suppressed (GMS) MRI signal of brain tissue that includes said SNc tissue;

obtaining a white matter suppressed (WMS) MRI signal of brain tissue that includes said SNc tissue;

~~combining~~ processing information from said GMS and WMS MRI signals to produce a and present resultant signals indicative of PSP.

11. (previously presented) A method as in claim 10 including causing said resultant signals to be indicative of a relative loss of MRI signal from medial as compared with lateral portions of the SNc.

12. (currently amended) A method of distinguishing between two forms of parkinsonism radiographically, Parkinson's disease (PD) and Progressive Supranuclear Palsy (PSP) through MRI of brain tissue that includes substantia nigra pars compacta ~~compacta~~ (SNc) tissue comprising:

obtaining at least two starting MRI images of brain tissue that includes said SNc tissue using different MRI parameters;

~~combining~~ processing the starting images to compute and present resultant signals differentiating between PD and PSP.

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13. (currently amended) A method as in claim 12 in which the at least two starting images comprise a gray matter suppressed (GMS) MRI image and a white matter suppressed (WMS) MRI image of brain tissue that includes said SNc tissue in the same MRI slice.

14. (original) A method as in claim 13 in which each of said GMS and WMS image is obtained using an inversion-recovery MRI pulse sequence.

15. (currently amended) A method of detecting Progressive Supranuclear Palsy (PSP) through MRI of brain tissue that includes substantia nigra pars ~~compacta~~ ~~compacta~~ (SNc) tissue comprising:

obtaining at least two starting MRI images of brain tissue that includes said SNc tissue using different MRI parameters;

~~combining~~ processing the starting images and computing and presenting resultant signals indicative of and identifying PSP.

16. (currently amended) A method as in claim 15 in which the at least two starting images comprise a gray matter suppressed (GMS) MRI image and a white matter suppressed (WMS) MRI image of brain tissue that includes said SNc tissue in the same MRI slice.

17. (currently amended) A method as in claim 16 in which each of said GMS and WMS images ~~image~~ is obtained using an inversion-recovery MRI pulse sequence